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Renewables Summit

London 2022

EVENT HIGHLIGHTS

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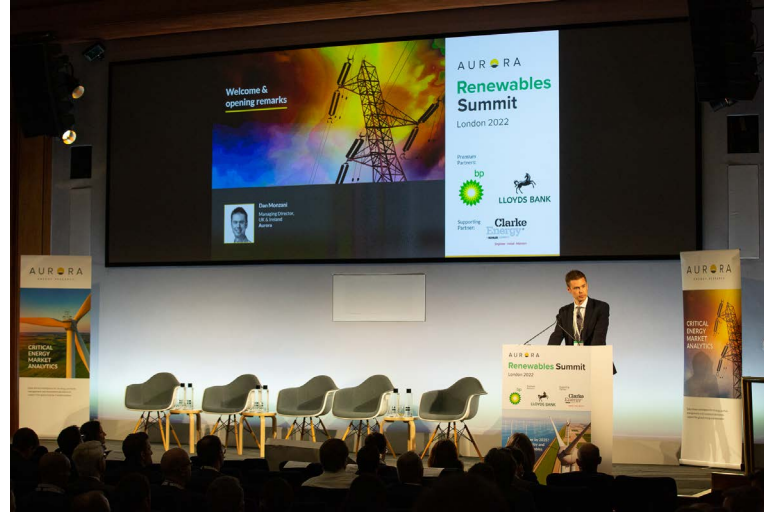
NET ZERO POWER BY 2035? THE RACE TO
DEPLOY AND INTEGRATE RENEWABLES

Tuesday 26 April | IET London: Savoy Place

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AURORA Renewables Summit

London 2022



DEAR FRIENDS AND COLLEAGUES

It was my great pleasure to welcome you to London this year for the 2022 Aurora Renewables Summit. I hope you enjoyed participating as much as we enjoyed the vigour and energy which you brought throughout the day.

Above all, it was great to meet up in person with so many friends and colleagues, both new and old, and engage seriously on the issues facing the renewables sector today.

We met to discuss energy under the most challenging of contexts: the geopolitical consequences of the war in Ukraine and the climate crisis. Renewables will have to be a central part of the strategy both to reduce dependence on Russian gas and to decarbonise the economy. Our aim was to look beyond ambitious targets and ask challenging questions about how the sector can respond to a new geopolitical landscape, what needs to happen to deploy renewables at the necessary pace, and how to integrate renewables, for example through investing in electrolytic hydrogen.

I won't attempt to summarise the various sessions here, but I hope this pack helps to distil our main takeaways from the day. It is obviously impossible to do justice to the experience of being there, and the richness of the questions and challenges in the room but we hope this is a useful synopsis. My over-riding sense of the day, however, was the optimism in the room on two dimensions: firstly, unlike previous affordability crises, public support for rapid deployment of renewables will be reinforced, not undermined by current events; secondly, that – for all the formidable practical planning, grid and integration challenges – there is a degree of consensus on what needs to be done.

My over-riding sense of the day was the optimism in the room: firstly, public support for rapid deployment of renewables will be reinforced not undermined by current events; secondly, that – for all the formidable practical planning, grid and integration challenges – there is a degree of consensus on what needs to be done

Many people deserve thanks for the critical role that they played in delivering the 2022 Aurora Renewables Summit.

All of our guest speakers were brilliant, insightful and engaging. A big thank you to Amber Rudd, Chin Ratnayake, Danielle Lane, Duncan Clark, Jonas Persson, Nicola Higgins, Julius Baghdadi, Louise Kingham and Stef Murphy.

Our generous partners deserve particular appreciation. It was a pleasure to work with our premium partners bp and Lloyds Bank and our supporting partner Clarke Energy. We would like to thank them for helping to make a success of the Summit and enabling us to make it an open event.

Finally, thank you to the team at Aurora, including the panel chairs and keynote speakers, but especially to Narcisa-Camelia Danila – the driving organisational force behind all our large events – for their collective diligence, commitment, and good humour.

We look forward to welcoming you again at other Aurora events throughout the year to continue the discussion!

DAN MONZANI
MANAGING DIRECTOR,
UK & IRELAND
AURORA



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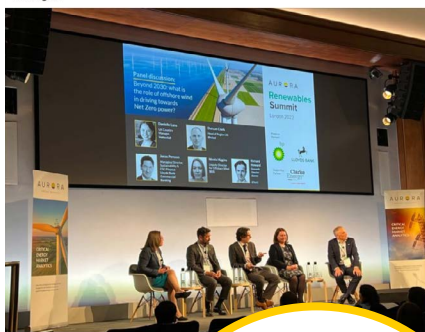
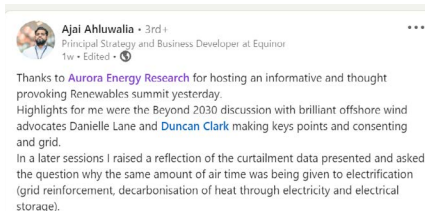
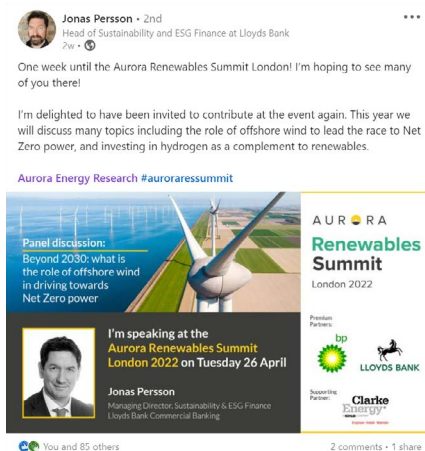
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SOCIAL MEDIA & FEEDBACK



It was very informative, useful & important. Thanks for your help through the registration & seamless event running!

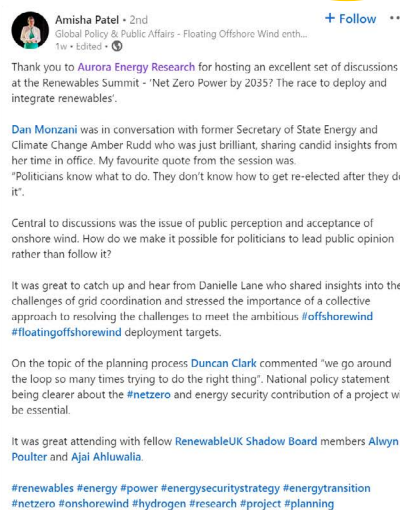
Thanks again for a thoroughly thought-provoking afternoon of presentations & discussion



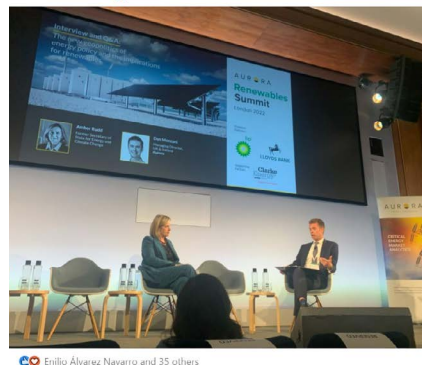
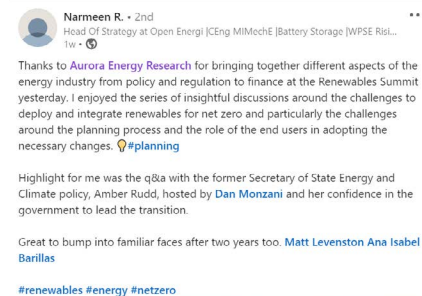
Many congratulations on a very successful Renewables Summit.

Well done for pulling off such a packed and successful event!

I thoroughly enjoyed the event!



Great location, great team of Aurora, it was such a pleasure to be there yesterday!



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PROGRAMME HIGHLIGHTS

INTERVIEW AND Q&A

THE NEW GEOPOLITICS OF ENERGY POLICY AND THE IMPLICATIONS FOR RENEWABLES

Speakers:

Amber Rudd, former Secretary of State for Energy and Climate Change

Dan Monzani, Managing Director, UK & Ireland, Aurora

Brief summary:

The Aurora Renewables Summit London took place in the shadow of the war in Ukraine, a geopolitical crisis which has led to spiralling gas and electricity prices and poses profound questions for Governments and industry about their energy bill affordability, security of supply, supply chain resilience, and the pace of decarbonisation. The Ukraine crisis might be the immediate context but the climate crisis remains.

The latest report from the UN IPCC published earlier in the month of the Summit warned that, even if current national plans are implemented, global temperatures remain likely to rise more than 1.5C. According to the IPCC, renewables are the largest, and one of the lowest cost, practical ways to decarbonise the global economy – as well as reducing gas dependence.

Amber Rudd, formerly both Secretary of State for Energy and Climate Change and Home Secretary, joined Aurora's UK & Ireland Managing Director, Dan Monzani, for a conversation about the implications of the war in Ukraine for energy geopolitics and domestic energy policy.

They discussed the potential for lasting changes to international gas markets and trade; the depth of public support for investment in renewables as a way to reduce gas use as well as for decarbonisation; the need for greater Government action on energy affordability; and potential market reforms such as the creation of local energy markets.

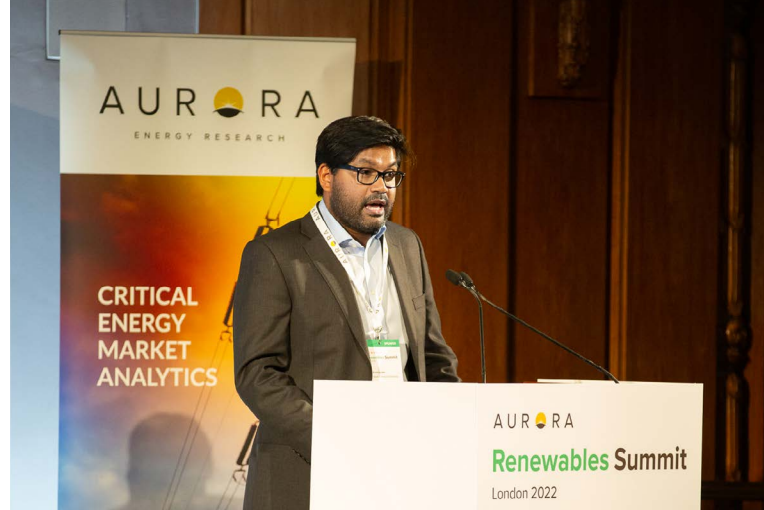
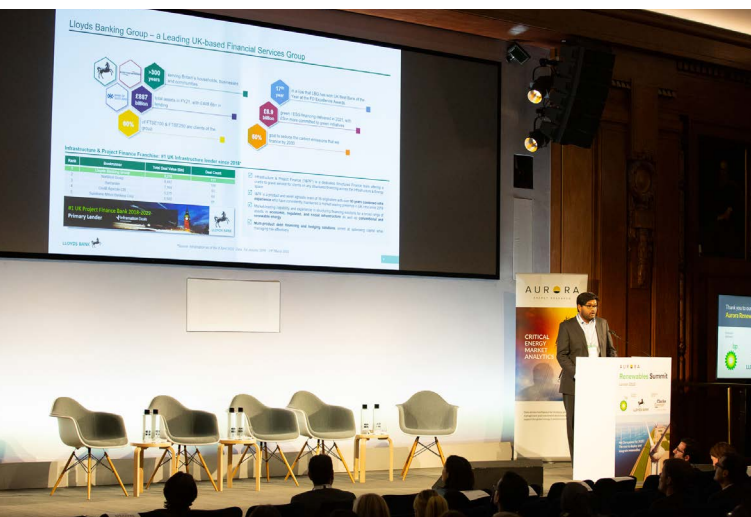
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PRESENTATION

FINANCING OFFSHORE WIND AND INNOVATIVE STRUCTURES

Speaker:

Chin Ratnayake, Director, Infrastructure & Project Finance, Lloyds Bank Commercial Banking

Brief summary:

In the coming decade c.30 new offshore wind projects or extensions are scheduled to enter construction, bringing almost 34GW of new capacity online once fully commissioned, enough to power more than 40 million homes with green energy. The capex ask to 2030 is around £55bn. This would mean potential debt financing requirement of between £38 and £44bn.

The offshore wind sector enjoys the deepest pool of liquidity for any project finance sector in the UK with over 50 banks and institutional investors currently active.

The sector is largely funded via long-term project finance debt from banks with only a handful of offshore wind projects with any meaningful debt investments from the institutional investor market. At Lloyds Bank, we believe there ought to be more involvement from these investors going forward.

The lending market will need to evolve to support the expected growth of this sector. This would mean recognising the maturity of the sector and appreciating that financing structures are likely to tighten in certain areas.

The most significant evolution required is how the lenders approach Merchant or Power Price Risk, recognising that going forward the offshore wind revenue stack is likely to be made up of a subsidy/CFD, Corporate PPAs and merchant.

The challenge has been set; the UK offshore wind sector will require significant balance sheet commitments from debt investors over the next few years. At Lloyds Bank, we remain very keen to play our part and help shape the market going forward as we have done for over the last 15 years.

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AURORA KEYNOTE

THE RACE TO DEPLOY AND INTEGRATE OFFSHORE WIND IN GREAT BRITAIN

Speaker:

Marlon Dey, Research Lead, Great Britain, Aurora

Brief summary:

Great Britain has the largest active offshore wind development pipeline in the world, and the UK Government aims to install up to 50GW of operational capacity by 2030.

Both the Government and industry have made progress towards reducing the development timescales for new offshore wind projects, however current lead times look to be ten years or greater which presents a risk to meeting government targets.

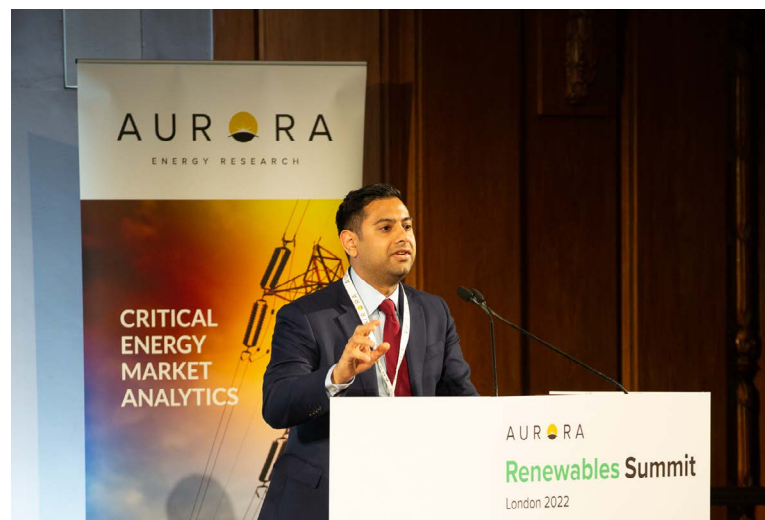
Aurora's April 2022 Central forecast sees GB reaching 33GW of installed offshore wind capacity by 2030, however concludes it can be increased if planning consent timescales can be shortened as outlined in the Government's recently announced Energy Security Strategy.

Analysis from Aurora shows that the impact of the European gas crisis has increased GB wholesale power prices over the next five years, which in turn will reduce the total cost of offshore wind CfD payments by 45%.

Further analysis from Aurora demonstrates how flexible electrification of the wider economy through the use of smart systems and hydrogen is critical for connecting offshore wind power to the end user, and maximising its decarbonisation potential.

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PANEL DISCUSSION

BEYOND 2030: WHAT IS THE ROLE OF OFFSHORE WIND IN DRIVING TOWARDS NET ZERO POWER?

Chair: Richard Howard, Research Director, Aurora

Panellists:

Danielle Lane, UK Country Manager, Vattenfall

Duncan Clark, Head of Region UK, Ørsted

Jonas Persson, Managing Director, Sustainability & ESG Finance, Lloyds Bank Commercial Banking

Nicola Higgins, Deputy Director for Offshore Wind, BEIS

Brief summary:

The panel considered the deliverability of the Government's targets to reach the increased target of 50 GW of operating offshore wind capacity by 2030 and a Net Zero power system by 2035.

Panellists from Government and industry discussed the key challenges to scaling up offshore wind deployment – such as economics, finance, planning, supply chains, and networks – and how they could be overcome.

In particular, they focussed on the technological and financing challenges of moving further offshore and towards a next generation of floating offshore wind farms.

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AURORA KEYNOTE

PRODUCING HYDROGEN ON RENEWABLES SITES: WHAT WILL IT TAKE TO COMPETE?

Speaker:

Benjamin Collie, Principal, Aurora

Brief summary:

As the capacity of renewable generation deployed across the country increases, developers and investors will face increasing grid constraints as well as downward pressure on capture prices. In this context, growing numbers of developers are considering adding hydrogen electrolyser at their sites to make better use of the electricity they generate.

To make this approach economical, projects will need off-takers for the hydrogen they produce, and they'll need to have a cost structure that enables them to compete against the off-takers' alternatives.

In this session we presented Aurora's analysis of the production, transport and storage costs that would contribute to the delivered levelised cost of hydrogen from an electrolyser co-located with renewables. Crucially, for a flexible electrolyser with variable output, compensating flexibility is needed somewhere in the supply chain. For a case where this flexibility is provided by on-site storage, we examined the way that different approaches to running the electrolyser could affect both the cost of input power and the amount of storage capacity required for the hydrogen produced. We also discussed how different project configurations and assumptions would affect the competitiveness of an electrolyser co-located with renewables compared with a grid-connected electrolyser on a consumer's own site.

Even today, a range of projects are in development that will combine renewables generation with hydrogen production and different forms of storage. Green hydrogen is not only an important part of the puzzle for decarbonising the economy in the decades ahead, but represents a commercial opportunity within the next few years.

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PANEL DISCUSSION

INVESTING IN HYDROGEN AS A COMPLEMENT FOR RENEWABLES

Chair: **Dilara Caglayan**, Senior Associate, Aurora

Panellists:

Julius Baghdadi, CCO & Co-Founder, Octopus Hydrogen

Louise Kingham, Senior VP for Europe
& UK Country Chair, bp

Stef Murphy, Director of Industrial Energy, BEIS

Brief summary:

As a result of the existing gas crisis, governments have increased their ambitions on renewables and low-carbon hydrogen. With EU and British governments new pledges, it has become evident that hydrogen will play a key role in decarbonising the European economy, especially when it is produced by using renewable energy. Focusing on the UK government's twin track approach, does blue hydrogen remain as the low-cost and low-carbon hydrogen? If green will achieve the cost parity with its alternative, why do we still go for blue hydrogen?

The panel discussed hydrogen's role as a source of flexibility to complement renewable power. What it would require making green hydrogen projects bankable and whether the existing and planned incentives suffice were argued. Additionally, an overview on the existing hydrogen projects, which are generally located near the demand centre, and when to expect these projects being operations was provided from an industrial point of view.



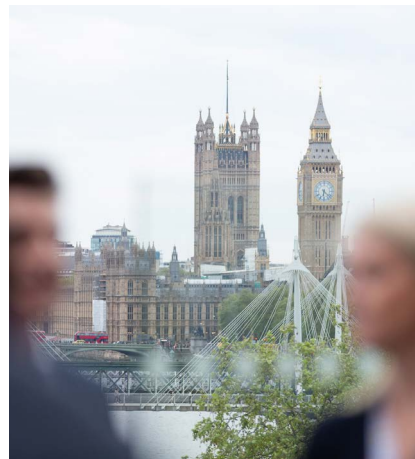
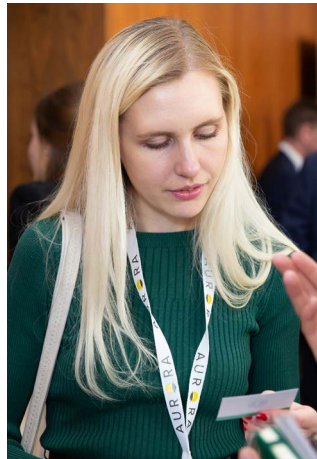
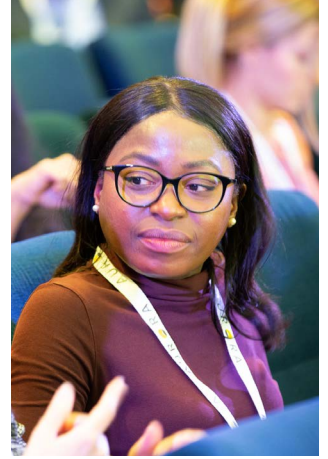
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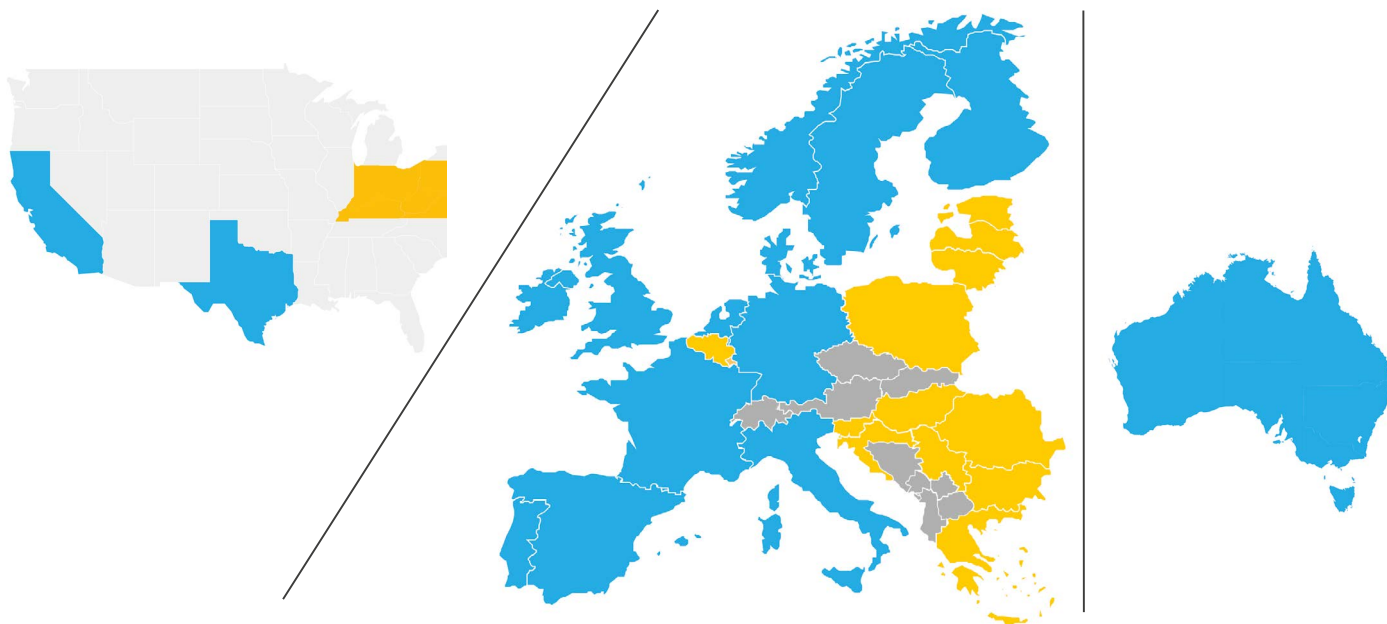
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tom.wilson@auroraer.com

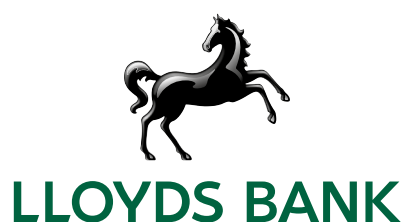


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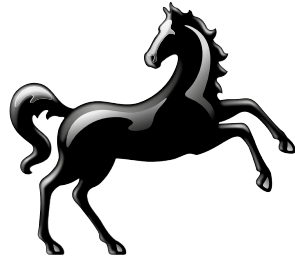
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For more information please contact our specialist team:

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Director, Power & Utilities
Lloyds Bank Commercial Banking
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+44(0)7551 135 943

Register for our upcoming events:



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Spring Forum

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For more information about our events, please get in touch:

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